

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A printing apparatus comprising:

a cartridge mounting portion on which a plurality of ink cartridges are detachably mountable, each said ink cartridge having an element into which information may be written;

an accumulating means for accumulating a discharge amount of ink discharged for every ink cartridge mounted on said cartridge mounting portion; and

a writing member for writing said information into said element,

wherein

a threshold is provided for every ink cartridge;

when an accumulated value obtained by said accumulating means for a certain ink cartridge reaches said threshold provided for said certain that ink cartridge, said writing member writes said information into said element of said certain that ink cartridge ~~wherefor~~ for which said accumulated value obtained by said accumulating means ~~for said ink cartridge~~ has reached said threshold;

said element provided with said ink cartridge is stored with a timing information for determining a timing for writing said information about said used amount or residual quantity into said ink cartridge; and

said threshold is set according to said timing information.

2. (original): A printing apparatus according to claim 1, wherein
one ink cartridge is selected out of said plurality of ink cartridges mounted on said
cartridge mounting portion according to said accumulated value.

3. (original): A printing apparatus according to claim 2, wherein
said writing member writes information about a used amount or residual quantity of ink
contained in said ink cartridge into said element in said selected ink cartridge.

4. (previously presented): A printing apparatus according to claim 3, wherein
when said writing member writes said information into said element of said ink cartridge,
said accumulated value is reset.

5. (original): A printing apparatus according to claim 2, wherein
said cartridge mounting portion is movable; and
said writing member conducts a writing operation in a noncontact state into said element,
when said cartridge mounting portion is in a predetermined positional relationship with said
writing member.

6. (original): A printing apparatus according to claim 1, wherein
said threshold for every ink cartridge is set according to a capacity of ink which may be
contained in said ink cartridge.

7. (currently amended): A printing apparatus comprising:
a cartridge mounting portion on which a plurality of ink cartridges are detachably
mountable, each said ink cartridge having an element into which information may be written;

an accumulating means for accumulating a discharge amount of ink discharged for every ink cartridge mounted on said cartridge mounting portion; and

a writing member for writing said information into said element,

wherein

a threshold is provided for every ink cartridge;

when an accumulated value obtained by said accumulating means for a certain ink cartridge reaches said threshold provided for that ink cartridge, said writing member writes said information into said element of that ink cartridge for which said accumulated value obtained by said accumulating means for said ink cartridge has reached said threshold~~A printing apparatus~~
according to claim 1, wherein;

a bi-directional printing by a discharge head which discharges ink is possible;

if said accumulated value of a certain ink cartridge reaches said threshold provided for said ink cartridge while said discharge head is moving in a direction away from said writing member and discharging ink to print, and if printing data exists, said printing data being data to be printed by discharging ink while said discharge head moves in a direction closer towards said writing member,

at least after printing is conducted by said discharge head moving towards said writing member and discharging ink, said writing member writes said information into said element.

8. (original): A printing apparatus according to claim 1, further comprising a discharge head for discharging ink while moving with said cartridge mounting portion, wherein:

said printing apparatus conducts a flushing operation for discharging ink periodically from said discharge head; and

said writing member writes said information into said element of said ink cartridge in which the accumulated value has reached said threshold, in relation with said flushing operation.

9. (currently amended): A printing apparatus comprising:

a cartridge mounting portion on which a plurality of ink cartridges are detachably mountable, each said ink cartridge having an element into which information may be written;

an accumulating means for accumulating a discharge amount of ink discharged for every ink cartridge mounted on said cartridge mounting portion;

a writing member for writing said information into said element; and

a discharge head for discharging ink while moving with said cartridge mounting portion,

wherein

a threshold is provided for every ink cartridge;

when an accumulated value obtained by said accumulating means for a certain ink cartridge reaches said threshold provided for that ink cartridge, said writing member writes said information into said element of that ink cartridge for which said accumulated value obtained by said accumulating means for said ink cartridge has reached said threshold~~A printing apparatus according to claim 8, wherein;~~

said printing apparatus conducts a flushing operation for discharging ink periodically from said discharge head;

said writing member writes said information into said element of said ink cartridge in
which the accumulated value has reached said threshold, in relation with said flushing operation;
and

said writing member writes said information into said element of said ink cartridge in
which the accumulated value has reached said threshold in relation with a flushing operation
conducted for the first time after said accumulated value of a certain ink cartridge reaches said
threshold provided for said ink cartridge.

10. (currently amended): A printing apparatus comprising:
a cartridge mounting portion on which a plurality of ink cartridges are detachably
mountable, each said ink cartridge having an element into which information may be written;
an accumulating means for accumulating a discharge amount of ink discharged for every
ink cartridge mounted on said cartridge mounting portion;
a writing member for writing said information into said element; and
a discharge head for discharging ink while moving with said cartridge mounting portion,
wherein
a threshold is provided for every ink cartridge;
when an accumulated value obtained by said accumulating means for a certain ink
cartridge reaches said threshold provided for that ink cartridge, said writing member writes said
information into said element of that ink cartridge for which said accumulated value obtained by
said accumulating means for said ink cartridge has reached said threshold~~A printing apparatus~~

~~according to claim 1, further comprising a discharge head for discharging ink while moving with said cartridge mounting portion, wherein:~~

said printing apparatus conducts a flushing operation for discharging ink periodically from said discharge head;

a writing position of said writing member and a conducting position of the flushing operation are provided in this order from a printing region side in a moving direction of said discharge head; and

while said discharge head is moving towards said conducting position of said flushing operation in order to perform said flushing operation for the first time after said accumulated value of a certain ink cartridge has reached said threshold provided for said ink cartridge,

said writing member writes said information when said element moving with said discharge head passes said writing position.

11. (previously presented): A printing apparatus according to claim 10, wherein:
a plurality of information may be written into said element; and
said writing member writes only information about a used amount or residual quantity out of said plurality of information.

12. (currently amended): A printing apparatus comprising:
a cartridge mounting portion on which a plurality of ink cartridges are detachably mountable, each said ink cartridge having an element into which information may be written;
an accumulating means for accumulating a discharge amount of ink discharged for every ink cartridge mounted on said cartridge mounting portion; and

a writing member for writing said information into said element,
wherein
a threshold is provided for every ink cartridge;
when an accumulated value obtained by said accumulating means for a certain ink
cartridge reaches said threshold provided for that ink cartridge, said writing member writes said
information into said element of that ink cartridge for which said accumulated value obtained by
said accumulating means for said ink cartridge has reached said threshold~~A printing apparatus~~
~~according to claim 1, wherein;~~

a plurality of printing modes with different printing speeds may be conducted; and
in at least one printing mode out of said plurality of printing modes,
even when said accumulated value of a certain ink cartridge has reached said threshold
provided for said ink cartridge, said writing member does not conduct said writing operation in
relation with a flushing operation conducted for the first time thereafter.

13. (original): A printing apparatus according to claim 1, wherein
said one writing member is provided for a plurality of ink cartridges mounted on said
cartridge mounting portion.

14. (previously presented): A printing apparatus comprising:
a cartridge mounting portion on which a plurality of ink cartridges are detachably
mountable, each said ink cartridge having an element into which information may be written;
an accumulating means for accumulating a discharge amount of ink discharged for every
ink cartridge mounted on said cartridge mounting portion;

a writing member for writing said information into said element; and
a discharge head for discharging ink while moving with said cartridge mounting portion,
wherein
a threshold is provided for every ink cartridge;
when an accumulated value obtained by said accumulating means for a certain ink
cartridge reaches said threshold provided for that ink cartridge, said writing member writes said
information into said element of that ink cartridge for which said accumulated value obtained by
said accumulating means for said ink cartridge has reached said threshold.~~A printing apparatus~~
~~according to claim 13, further comprising a discharge head for discharging ink while moving~~
~~with said cartridge mounting portion, wherein:~~

said one writing member is provided for a plurality of ink cartridges mounted on said
cartridge mounting portion;

said printing apparatus conducts a flushing operation for discharging ink periodically
from said discharge head; and

in a state where said discharge head is positioned in said conducting position of said
flushing operation, said writing member opposes an element provided with any one of said ink
cartridges mounted on said cartridge mounting portion.

15. (currently amended): A printing apparatus comprising:
a cartridge mounting portion on which a plurality of ink cartridges are detachably
mountable, each said ink cartridge having an element into which information may be written;

an accumulating means for accumulating a discharge amount of ink discharged for every ink cartridge mounted on said cartridge mounting portion; and

a writing member for writing said information into said element,

wherein

a threshold is provided for every ink cartridge;

when an accumulated value obtained by said accumulating means for a certain ink cartridge reaches said threshold provided for that ink cartridge, said writing member writes said information into said element of that ink cartridge for which said accumulated value obtained by said accumulating means for said ink cartridge has reached said threshold~~A printing apparatus according to claim 1, wherein;~~

said writing member is respectively provided for said plurality of ink cartridges mounted on said cartridge mounting portion; and

said writing members oppose said respective elements provided with said ink cartridges mounted on said cartridge mounting portion in a state where a discharge head is positioned in a conducting position of a flushing operation.

16. (currently amended): A printing apparatus comprising:

a cartridge mounting portion on which a plurality of ink cartridges are detachably mountable, each said ink cartridge having an element into which information may be written;

an accumulating means for accumulating a discharge amount of ink discharged for every ink cartridge mounted on said cartridge mounting portion; and

a writing member for writing said information into said element,

wherein

a threshold is provided for every ink cartridge;

when an accumulated value obtained by said accumulating means for a certain ink cartridge reaches said threshold provided for that ink cartridge, said writing member writes said information into said element of that ink cartridge for which said accumulated value obtained by said accumulating means for said ink cartridge has reached said threshold~~A printing apparatus according to claim 1, wherein:~~

said writing member is provided respectively for said plurality of ink cartridges mounted on said cartridge mounting portion; and

said writing member conducting writing of said information is a writing member disposed in a position closest to a printing region.

17. (currently amended): A printing apparatus comprising:

a cartridge mounting portion on which a plurality of ink cartridges are detachably mountable, each said ink cartridge having an element into which information may be written;

an accumulating means for accumulating a discharge amount of ink discharged for every ink cartridge mounted on said cartridge mounting portion; and

a writing member for writing said information into said element,

wherein

a threshold is provided for every ink cartridge;

when an accumulated value obtained by said accumulating means for a certain ink cartridge reaches said threshold provided for that ink cartridge, said writing member writes said

information into said element of that ink cartridge where said accumulated value obtained by
said accumulating means for said ink cartridge has reached said threshold~~A printing apparatus~~
according to claim 1, wherein:

said writing member may read said information from said element;

said writing member reads an ID information stored in said element of said ink cartridge
when said ink cartridge is mounted on said cartridge mounting portion; and

said writing member, after reading said ID information, recognizes each element by said
ID information which has been already read, without conducting a reading operation again, and
writes said information into each element of said ink cartridge mounted on said cartridge
mounting portion.

18. (canceled).

19. (currently amended): A printing apparatus according to claim 18, wherein:

said timing information is a capacity information about a capacity of ink which may be
contained in said ink cartridge, and

said threshold is set according to said capacity information.

20. (currently amended): A printing apparatus according to claim 18, wherein:

said timing information is a threshold information indicative of a threshold corresponding
to a capacity of ink which may be contained in said ink cartridge, and

said threshold is set according to said threshold information.

21. (original): A printing apparatus according to claim 5, further comprising a discharge
head for discharging ink while moving with said cartridge mounting portion, wherein:

said printing apparatus conducts a flushing operation for discharging ink periodically from said discharge head; and

said writing member writes said information into said element of said ink cartridge in which the accumulated value has reached said threshold, in relation with said flushing operation.

22. (original): A printing apparatus according to claim 21, wherein

when conducting said flushing operation, said writing member selects one ink cartridge out of said plurality of ink cartridges mounted on said cartridge mounting portion according to said accumulated value.

23. (original): A printing apparatus according to claim 1, wherein

said accumulating means selects at least one ink cartridge, but less than all ink cartridges, according to said accumulated value, and

wherein said writing member writes said information into only said at least one selected ink cartridge.

24. (currently amended): A printing apparatus comprising:

a cartridge mounting portion on which a plurality of ink cartridges are detachably mountable, each said ink cartridge having an element into which information may be written;

an accumulating means for accumulating a discharge amount of ink discharged for every ink cartridge mounted on said cartridge mounting portion; and

a writing member for writing said information into said element,

wherein

a threshold is provided for every ink cartridge;

when an accumulated value obtained by said accumulating means for a certain ink cartridge reaches said threshold provided for that ink cartridge, said writing member writes said information into said element of that ink cartridge for which said accumulated value obtained by said accumulating means for said ink cartridge has reached said threshold~~A printing apparatus according to claim 1, wherein;~~

said printing apparatus is capable of detecting that ink in any one of said ink cartridges has reached a predetermined amount,

before detecting that the ink in said ink cartridge has reached said predetermined amount, said printing apparatus sets said threshold to a predetermined value, and

after detecting that the ink in said ink cartridge has reached said predetermined amount, said printing apparatus sets said threshold according to said accumulated value accumulated until the ink in said ink cartridge has reached said predetermined amount.

25. (original): A printing apparatus according to claim 24, further comprising
a head for discharging ink,
wherein

said accumulating means accumulates a discharge amount of ink discharged from said head according to a drive amount of said head.

26. (original): A printing apparatus according to claim 25, wherein said drive amount of said head includes at least either one of:

a drive amount for which said head is driven to form dots; and

a drive amount for which said head is driven to prevent nozzle clogging.

27. (original): A printing apparatus according to claim 24, further comprising:
a head for discharging ink; and
an absorption member for absorbing ink from said head,
wherein
said accumulating means accumulates a discharge amount of ink that is absorbed by said
absorption member and discharged from said head.

28. (canceled).

29. (canceled).